be used to monitor hemodialysis adequacy. However, since URE does not contribute to the spectrometric signals, these data suggest the presence of undetermined substances in spent dialysate with a removal profile similar to URE. Probably, β2M removal cannot be monitored by spectrophotometric and spectrofluorimetric analysis of spent dialysate, as indicated by the results found in LF dialysis.
Conclusions: In conclusion, urea into spent dialysate strictly correlates with absorbance values, even if urea does not contribute to the spectrometric signals. A predominant contribution to the spectrometric signals appears to be due to substances to be identified, before validating spectrometric analyses in spent dialysate as a method to monitor dialytic efficiency. In any case, spectrometric analysis of spent dialysate cannot be used to monitor the plasma clearance of substances cleared mainly by adsorption to dialysis membrane.

FP381 RELATIONSHIP OF KT/VM AND PROTEIN CATABOLIC RATE WITH HYPERPHOSPHATEMIA IN PATIENTS UNDER CHRONIC HEMODIALYSIS.

Edwin Marka-Castro[1], Manuel Ignacio Torres Zamora[2], Juan Giron-Mino[3], Maria Angelica Jaime-Solis[1], Luis Mauro Arteaga[1], Hector Romero[1] and Edwin Marka-Castro[1]
[1]Hospital Dalinde, [2]Hospital Dalinde,Mexico D.F.Mexico, [3]Hospital San Rafael

Introduction and Aims: Hyperphosphatemia is a frequent complication in patients under chronic hemodialysis associated to high mortality. The purpose of this study was to evaluate the relationship between hyperphosphatemia, dialysis dose (Kt/Vm), and protein catabolic rate (nPCR) in adult patients under chronic hemodialysis (three sessions per week).
Methods: 607 adult patients, 377 male and 240 female, 44.7±17.1 years old, were studied. Patient had been more than three months in chronic hemodialysis, three sessions per week. The patients were divided into two groups. Group 1 (316 patients) with serum phosphorous(P) higher than 5.5 mg/dl and group (291 patients) with serum phosphorous lower than 5.5 mg/dl . The mean values for the midweek predialysis session of serum phosphorous, Kt/Vm, nPCR, and BUN predialysis are shown in the following table. The statistical program SPSS 15 was used and a value of $p < 0.05$ was considered significant.
Results: Results indicated that the value of Kt/Vm was higher in the patients that had a serum phosphorous lower than 5.5 mg/dl. The protein catabolic rate (nPCR) was higher in patients with serum phosphorous higher than 5.5 mg/dl. Finally, there was a significant positive Pearson correlation between protein catabolic rate and serum phosphorous (r=0.262. p<0.05).
Conclusions: It is concluded that hyperphosphatemia is associated with a reduction of dialysis dose and with an increment of protein catabolic rate in patients under chronic hemodialysis (three sessions per week).

FP381 Table 1

		P	Kt/Vm	nPCR	BUN
	n	mg/dl		g/kg/d	mg/dl
Group 1	316	7.22±1.43	1.43±0.37	1.03±0.26	74.4±18.4
Group 2	291	4.14±0.92	1.49±0.32	0.91±0.25	61.4±17.6
p		<0.001	<0.02	<0.001	<0.001

FP382 NOVEL COMPOSITE DIALYSIS ADEQUACY INDEX: COMPARISON WITH UREA STANDARD KT/V (STDKT/V)

Alp Akonur[1], Ken Leypoldt[1], Markku Asola[1] and Bf Culleton[2]
[1]Baxter Healthcare Corporation, [2]Baxter Healthcare, Deerfield, USA

Introduction and Aims: Although urea Kt/V has been used to define a dose of dialysis because it is a measure of small solute clearance, it is increasingly recognized that this parameter, by itself, is not sufficient for determining dialysis adequacy. For haemodialysis (HD) prescriptions applied more frequently than thrice weekly, urea stdKt/V has been proposed as a dialysis adequacy index; however, this index does not account for differences in fluid retention or volume excess, a parameter associated with patient mortality (Kalantar-Zadeh et al, Circulation 2009). Here, we propose a novel composite dialysis adequacy index (I_{CDA}) that combines a measure of small solute clearance per treatment (weekly equilibrated urea Kt/V or eKt/V), treatment frequency and volume excess.
Methods: A volume excess model was used to assess the effect of treatment frequency and fluid intake as the time-averaged weekly volume excess (Vavg), similar to that recently described by others (Stockinger et al, NDT 2011). Such a measure can be expressed either for generic modalities as L of volume excess per L of fluid intake or for specific modalities as L of volume excess. An underlying assumption of our approach was that all patients achieved their target dry weight by the end of the treatment. ICDA was formulated so that it was equivalent for generic thrice weekly conventional HD (CHD) and generic peritoneal dialysis (PD) as ICDA = (eKt/V÷eKt/V for CHD) ÷ (V_{avg}÷V_{avg} for CHD)½; ICDA is a measure of dialysis adequacy relative to CHD.
Results: Calculated comparisons of ICDA and urea stdKt/V as adequacy indexes are tabulated below for generic CHD, generic PD and short daily HD (SDHD) with the NxStage System and for SDHD as delivered in the FHN Daily Trial (Chertow et al, NEJM 2010):
Conclusions: ICDA provides a comparable measure of dialysis adequacy among modalities as obtained when using stdKt/V; for example, ICDA for SDHD during the FHN Daily Trial of 1.37 compares favorably with that when using stdKt/V (3.54/2.49=1.41). The advantage of a composite dialysis adequacy index is that it can be individualized for patient-specific differences in volume excess and can be readily extended to include other parameters such as serum middle molecule and phosphous concentrations.

FP382 Table 1

Comparison (Trial)	Modality	stdKt/V	Weekly eKt/V	V_{avg}	I_{CDA} vs. CHD
Generic CHD vs Generic PD & SDHD-NxStage	Generic CHD	2.15	3.60	1.13 L/L	Generic reference
	Generic PD	1.70	1.70	0.25 L/L	1.00
	SDHD-NxStage	2.21	2.70	0.60 L/L	1.03
FHN Daily Trial	CHD - FHN	2.49	4.23	1.45 L	FHN reference
	SDHD - FHN	3.54	5.30	1.21 L	1.37

FP383 KT/V IS A POOR PREDICTOR OF CONCENTRATION OF A BROAD RANGE OF UREMIC TOXINS

Sunny Eloot[1], Griet Glorieux[2], Neirynck Nathalie[3] and Raymond Vanholder[4]
[1]Hemodialysis 1p8, Ghent University Hospital, [2]Ghent University Hospital, Ghent, Belgium, [3]Ghent University Hospital, Gent, Belgium, [4]Ghent University Hospital - Nephrology - Gent - Belgium

Introduction and Aims: Kt/V is used as marker of dialysis adequacy. The purpose of this study was to investigate whether Kt/V is representative for the concentration of a broad array of uremic toxins in patients on hemodialysis (HD).
Methods: Predialysis blood samples were taken during a midweek session in 75 chronic HD patients. Samples were analyzed by colorimetry, HPLC, or ELISA for a broad range of uremic solutes: urea, creatinine (Crea), uric acid (UA), symmetric dimethylarginine (SDMA), asymmetric dimethylarginine (ADMA), beta-2-microglobulin (B2M), and free and total hippuric acid (HA), 3-carboxy-4-methyl-5-propyl-2-furanpropionic acid (CMPF), indoxyl sulfate (IS), indole acetic acid (IAA), p-cresylsulfate (PCS), and p-cresylglucuronide (PCG). Associations were evaluated between concentrations and different parameters; i.e. age, body weight (BW), Kt/V, Residual Renal Function (RRF), normalized Protein Catabolic Rate (nPCR), and vintage. Multifactor analyses were performed per solute.
Results: Kt/V only showed non consistent correlations with concentrations of the evaluated solutes; R negative for Crea and UA (both -0.2), and R positive for HA and free HA (both 0.2) and ADMA (0.3), while correlations with the concentrations of all other solutes were not significant. nPCR, on the contrary, showed the best associations for the majority of solutes with R≈1 for urea, 0.4-0.6 for Crea, UA, SDMA, PCS, and free PCS, and 0.2-0.4 for ADMA, HA, IS, PCG, free HA, and free PCG. RRF showed inversed associations with B2M (R=-0.5) and with Crea, ADMA, SDMA, HA, IS, PCG, free HA, free IS, free PCS, and free PCG (R=- 0.2 to -0.4). In multifactorial analysis, nPCR and RRF but not Kt/V were significantly determining the concentrations of ADMA, SDMA, HA, IS, PCG, free HA, free PCS, and free PCG. Age, BW, and vintage did not contribute significantly to any correlation, except for Crea. The percentage difference between highest and lowest absolute value was in the same range for the parameters as for the concentrations, i.e. 60% (Kt/V) to 100% (RRF), and 68% (ADMA) to 100% (total and free PCG), respectively.
Conclusions: In conclusion, uremic toxin concentration seems to be substantially more dependent on dietary protein intake and residual renal function than on dialysis adequacy as assessed by Kt/V. Hence, Kt/V cannot be considered as a major representative for the evolution of the concentration of a large array of toxins in HD patients, and by extension for their toxicity, which conceivably is concentration-dependent. Affecting intestinal generation and RRF seems more substantial.